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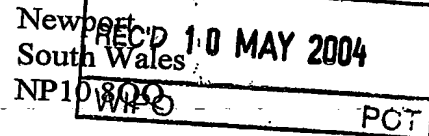


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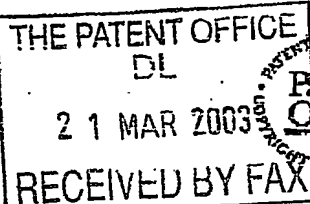
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11 MAR 2003

2. Patent application number

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0306555.4

MAR03 E794260-1 010002

C/7700 0.00-0306555.4

3. Full name, address and postcode of the or of each applicant (underline all surnames)

Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

i-Dare Innovation Limited
Unit 1, Elvingston Science CentreGladsmuir
East Lothian

EH33 1EH

859288300

United Kingdom

4. Title of the invention

Display device

5. Name of your agent (if you have one)"Address for service" in the United Kingdom
to which all correspondence should be sent
(including the postcode)Kennedys Patent Agency Limited
Floor 5, Queens House
29 St Vincent Place
GLASGOW
G1 2DT

Patents ADP number (if you know it)

8058240002

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Country

Priority application number
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Number of earlier application

Date of filing
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Description 20

Claim(s) *DL*

Abstract

Drawing(s) 8 *only*

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Priority documents

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Statement of inventorship and right to grant of a patent (Patents Form 7/77)

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11. I/We request the grant of a patent on the basis of this application.

Signature
KENNEDYS*K* *zs*Date
21.03.03

12. Name and daytime telephone number of person to contact in the United Kingdom

Matthew Lincoln

Tel: 0141 226 6926

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1 Display device

2

3 The present invention relates to the field of electronic
4 display devices, and in particular electronic display
5 devices for recording, storage and playback of multimedia
6 content such as digital video, audio, and text.

7

8 Retail outlets such as grocery stores and supermarkets
9 stock an increasing variety of products. Of these
10 products, many are different brands for competing,
11 similar goods. Promotion of these competing brands in-
12 store is typically restricted to product labelling and
13 packaging. Additional information such as nutritional
14 information, recipe ideas etc must also compete with the
15 branding cereal on the product itself.

16

17 Alternative promotion techniques include placing leaflets
18 or cards in dispensers located close to the product.
19 However, these leaflets are similarly limited in the
20 amount of information that they can contain, and rely on
21 the consumer noticing the dispenser and removing a
22 leaflet.

23

1 Advertising posters may also be used in stores in order
2 to promote various products. However, the posters
3 require a significant flat surface, which severely limits
4 the positions in which they could be used. In addition,
5 since the posters are static media they may not
6 adequately get the attention of consumers. Furthermore,
7 the posters must be taken down and replaced with printed
8 posters should the product ranges or particular offers
9 change.

10

11 More eye-catching are the plasma screens positioned
12 around retail outlets for displaying and advertising a
13 wide range of products in a given store. The size of
14 these plasma displays precludes their placement in
15 amongst the products themselves; they are generally
16 placed in elevated positions at central areas of the
17 store. Plasma displays are often expensive. In
18 addition, they require connection to external equipment
19 in order to provide a display.

20

21 It would therefore be desirable to provide an improved
22 media for displaying promotional material in a retail
23 environment, and to at least mitigate some of the
24 drawbacks of the prior art.

25

26 It is an aim of one aspect of the present invention to
27 provide an electronic display device that provides
28 improved integration into retail environments.

29

30 It is an aim of one aspect of the invention to provide a
31 device that allows brand reinforcement at the point of
32 sale.

33

1 Further aims and objects of the present invention will
2 become apparent from a reading of the following
3 description.

4

5 According to a first aspect of the invention, there is
6 provided an electronic display device comprising:

- 7 - a housing;
- 8 - data storage means;
- 9 - data processing means;
- 10 - a display screen mounted to the housing;
- 11 - means for securing the device at a point of sale;
- 12 - wherein the housing is moulded in the shape of a
- 13 product offered for disposal at the point of sale.

14

15 According to a second aspect of the invention, there is
16 provided an electronic display device comprising:

- 17 - a housing moulded in the shape of a product offered for
- 18 disposal at a point of sale;
- 19 - a display screen mounted within the housing;
- 20 - data storage means;
- 21 - data processing means;
- 22 - means for securing the device at the point of sale.

23

24 According to a third aspect of the invention, there is
25 provided an electronic display device comprising:

- 26 - a housing;
- 27 - data storage means;
- 28 - data processing means;
- 29 - a display screen mounted to the housing;
- 30 - means for securing the device at a point of sale;
- 31 - wherein the housing is incorporated as part of a
- 32 dispenser for a beverage offered for disposal at the
- 33 point of sale.

1

2 Preferably, the electronic display device is capable of
3 displaying digital video content.

4

5 The housing may be moulded to the approximate dimensions
6 of the product offered for disposal at the point of sale.

7

8 The electronic display device may be provided with a
9 loudspeaker to enable the output of audio content.

10

11 Preferably, the device further comprises a wireless
12 transceiver for receiving or transmitting data from or to
13 a remote device.

14

15 Preferably, the remote device is a portable unit having a
16 wireless transceiver for receiving or transmitting data
17 from or to the electronic display device.

18

19 Preferably, the electronic display device is secured to a
20 shelf for displaying products offered for disposal.

21

22 The housing may be provided with a slot for the
23 insertion/or removal of a removable memory storage unit.

24

25 The display may be a LCD module with a 320x480-pixel
26 matrix.

27

28 The housing may comprise a plurality of part housings,
29 each part housing being provided with corresponding
30 engaging means.

31

5

1 Preferably, the means for securing the device at the
2 point of sale is a base plate having fixings for
3 attachment at the point of sale.
4

5 The housing may be provided with engagement means for
6 releasably engaging with corresponding engagement means
7 provided on the base plate.
8

9 The engagement means may be a plurality of apertures and
10 corresponding resilient snap connectors.
11

12 The engagement means may be provided with a locking
13 mechanism, for retaining engagement, the locking
14 mechanism being releasable upon interaction with a
15 cooperating key.
16

17 The housing may be provided with a slot for the
18 insertion/or removal of a removable memory storage unit.
19

20 The display may be a LCD module with a 320x480-pixel
21 matrix.
22

23 The electronic display device may be provided with an
24 interface for enabling interaction by a user.
25

26 The interface may be a touch-screen. Alternatively, the
27 interface may be a keypad.
28

29 The housing may comprise a plurality of part housings,
30 each part housing being provided with corresponding
31 engaging means.
32

1 The housing may be shaped such that the footprint of the
2 electronic display device is substantially identical to a
3 product offered for disposal at a point of sale.

4

5 The housing may be substantially cylindrical in shape.

6

7 The housing may be bottle-shaped. Alternatively, the
8 housing may be can-shaped.

9

10 According to a fourth aspect of the invention, there is
11 provided an arrangement for electronic display comprising
12 at least one electronic display device, each electronic
13 display device having a housing, data storage means, data
14 processing means, a display screen mounted to the
15 housing, and means for securing the device at a point of
16 sale; and a portable data storage device communicable
17 with the electronic display device such that data is
18 transferable between the portable data storage and the
19 electronic display device.

20

21 The housing may be housing moulded in the shape of a
22 product offered for disposal at the point of sale.

23

24 The electronic display device may be provided with a
25 loudspeaker to enable the output of audio content.

26

27 Preferably, the electronic display device further
28 comprises a wireless transceiver for receiving or
29 transmitting data from or to a remote device.

30

31 Preferably, the portable data storage device is a
32 portable unit having a wireless transceiver for receiving

1 or transmitting data from or to the electronic display
2 device.

3

4 Preferably, the electronic display device is secured to a
5 shelf for displaying products offered for disposal.

6

7 The housing may be provided with a slot for the
8 insertion/or removal of a removable memory storage unit.

9

10 The portable data storage device may be provided with a
11 slot for the insertion/or removal of a removable memory
12 storage unit.

13

14 The display may be a LCD module with a 320x480-pixel
15 matrix.

16

17 The housing may comprise a plurality of part housings,
18 each part housing being provided with corresponding
19 engaging means.

20

21 Preferably, the means for securing the device at the
22 point of sale is a base plate having fixings for
23 attachment at the point of sale.

24

25 The housing may be provided with engagement means for
26 releasably engaging with corresponding engagement means
27 provided on the base plate.

28

29 The engagement means may be a plurality of apertures and
30 corresponding resilient snap connectors.

31

1 The engagement means may be provided with a locking
2 mechanism for retaining engagement, the locking mechanism
3 being releasable upon interaction with a cooperating key.
4

5 The housing may be provided with a slot for the
6 insertion/or removal of a removable memory storage unit.
7

8 The display may be a LCD module with a 320x480-pixel
9 matrix.
10

11 The electronic display device may be provided with an
12 interface for enabling interaction by a user.
13

14 The interface may be a touch-screen. Alternatively, the
15 interface may be a keypad.
16

17 The housing may comprise a plurality of part housings,
18 each part housing being provided with corresponding
19 engaging means.
20

21 The housing may be shaped such that the footprint of the
22 electronic display device is substantially identical to a
23 product offered for disposal at a point of sale.
24

25 The housing may be substantially cylindrical in shape.
26

27 The housing may be bottle-shaped. Alternatively, the
28 housing may be can-shaped.
29

30 There will now be described, by way of example only,
31 various embodiments of the invention with reference to
32 the following drawings, of which:
33

1 Figures 1a and 1b show an embodiment of the present
2 invention from perspective views;

3

4 Figure 2 shows an exploded view of the embodiment of
5 Figures 1a and 1b, and various components thereof;

6

7 Figure 3 shows an embodiment of the invention in use;

8

9 Figure 4 shows in schematic form the interaction of the
10 internal components of an embodiment of the invention;

11

12 Figure 5 shows a further aspect of the invention
13 including a plurality of electronic display devices in
14 situ;

15

16 Figure 6 shows an electronic display device in accordance
17 with an alternative embodiment of the invention from a
18 perspective view;

19

20 Figure 7 shows an exploded view of the embodiment of
21 Figure 6, and various components thereof;

22

23 Figure 8 shows a further alternative embodiment of the
24 invention.

25

26 Referring firstly to Figures 1a, 1b and 2, a display
27 device is shown, generally depicted at 10. The device
28 includes a housing 12 comprising front and rear housing
29 portions 12a and 12b. The front and rear housing
30 portions are joined by screw guides 13a and 13b, which
31 extend across an interior cavity defined by the housing.
32 The ends of the screw guides 13a and 13b are received in
33 to corresponding sockets on the front housing 12a. The

10

1 screw guides define a bore into which a screw is
2 inserted. The screw securely fixes the front and rear
3 housing portions to one another.

4

5 It will be appreciated that alternate means of fixing the
6 front and rear housing portions could be used. For
7 example, fixing could be by integrally moulded snap
8 connectors.

9

10 The front and rear housing portions are positioned on a
11 base plate 14. The base plate 14 is provided with two
12 screw terminals 16 for securing the base plate to a fixed
13 structure such as a supermarket shelf. The base 14 is
14 provided with a central locating button 17 which
15 protrudes vertically from the base 14. A corresponding
16 semi-circular cut-out 18 is provided on each of the front
17 and rear housing portions 12a and 12b for receiving the
18 locating button 17 when the front and rear housing
19 portions are connected.

20

21 In addition, the base 14 includes resilient snap
22 connectors 19 for engaging with corresponding formations
23 20 provided on the housing portions. The snap connectors
24 19 engage the housing and secure it to the base, as well
25 as preventing it from rotating with respect to the base
26 14. In the example shown, three such snap connectors and
27 corresponding slots 20 are provided in the device. The
28 spacing of the connectors may be such that it is only
29 possible to fix the housing in one particular
30 orientation, i.e. with the front housing portion facing
31 in the correct direction.

32

11

1 The base 14 is also provided with a locking mechanism.
2 This is in the form of a resilient tongue 21, and
3 prevents the housing from being detached from the base
4 unit. A cooperating key is required in order to interact
5 with the locking mechanism 21 and so enable removing of
6 the housing and thereby access to the internal
7 components.

8
9 The housing defines a cavity for the internal components
10 of the device. The components include a circuit board 24
11 and a crystal display 25. The circuit board 24 includes
12 an audio-video graphics guard and appropriate data
13 processing components. In addition, the preferred
14 embodiment includes data storage components and a
15 Bluetooth ® wireless chip capable of receiving data from
16 a remote Bluetooth ® enabled device. A power supply for
17 the device is also required, which may be a rechargeable
18 battery pack.

19
20 The liquid crystal display (LCD) is a full colour, high
21 resolution TFT liquid crystal display module with, for
22 example a 320x480 pixel matrix.

23
24 In addition, the present embodiment includes a removable
25 memory card 27 and associated receiving socket 26. The
26 memory stick can be inserted into the socket when the
27 housing is assembled by virtue of the slots 28 provided
28 in the rear housing portion 12b. The memory card
29 receiving socket 26 is held in position by supports 29
30 provided in the rear housing 12b, which are aligned with
31 screw holes on the board 24. Similar supports are
32 provided in the front housing portions 12 for supporting
33 the LCD module 25. The LCD module is located such that

1 it is aligned with the window 30 provided in the front
2 housing. The LCD module is located such that it is fully
3 displayed through window 30, and it may be connected to
4 the circuit board via corresponding connectors 31a and
5 31b.

6
7 In the embodiments shown, the device is also provided
8 with a keypad comprising buttons 32. These buttons are
9 electronically connected to the circuit board 24 by leads
10 (not shown). A cap 33 completes the appearance of the
11 device.

12
13 The display device is shaped in the form of a replica
14 model of a product container. In the example shown, the
15 display device is bottle-shaped. The shape of the
16 container provides the device with substantially the same
17 dimensions as products on sale in the retail outlet.
18 This allows then to be positioned in amongst the products
19 without occupying an excessive amount of shelf space.

20
21 In addition, the shaping of the display device allows the
22 production of an exact, or near exact product replica.
23 For example, the display device can be provided with the
24 labelling, colouring and three-dimensional shape of a
25 particular brand of beer to be advertised.

26
27 Figure 3 shows the device 10 in use, being positioned on
28 a shelving unit 32 located in a retail outlet. The
29 display device 10, which in this example is bottle-
30 shaped, is placed in amongst a series of bottles 34. The
31 shape of the device enables it to be positioned on a
32 shelf, with the products themselves. The footprint of
33 the device 10 is substantially identical to the footprint

1 of the bottles 34. The device does therefore not take
2 out an excessive amount of valuable shelf space. The
3 device is positioned such that the LCD 25 is facing
4 outwards to the customers.

5

6 The electronic components of the device function to
7 display video material to the customers. In particular,
8 the display device runs a series of advertisements for
9 particular brands. The shape and size of the display
10 device enables it to be located alongside the product
11 that it advertises, and thus enables reinforcement of the
12 particular brands at the point of sale.

13

14 Figure 4 shows the interaction of the electrical
15 components of the display device in schematic form. The
16 diagram shows the system generally depicted at 40,
17 connected to a power supply 44. The power supply is for
18 example a rechargeable battery pack provided in the
19 housing of the device. Alternatively, the power supply
20 could be an external power source. The power supply
21 supplies necessary power for all of the components of the
22 device.

23

24 The system 40 includes memory unit 42 which in this
25 example is RAM having a 32 megabyte capacity. The memory
26 storage unit 42 stores data input to the device via
27 input/output 45. In particular, the memory storage unit
28 42 holds audio visual data to the display LCD module 25,
29 and output via loudspeaker 47.

30

31 Block 41 is a data processing unit providing all the data
32 control and processing of the entire device. In
33 particular, the data processing unit 41 accesses memory

14

1 storage unit 42 to obtain the audio-visual data to be
2 displayed to the consumer.

3

4 Input/output 45 is a Universal Serial Bus (USB) port for
5 connecting an external device for updating the display
6 device and or accessing data recorded by the display
7 device.

8

9 Also shown in Figure 4 is Bluetooth ® enabled chip 43.
10 The chip 43 allows wireless communication between the
11 display device 10 and an external Bluetooth ® enabled
12 device. The Bluetooth ® enabled chip 43 communicates
13 with the memory storage 42, so that data received by the
14 Bluetooth ® enabled chip 43 can be retained in the
15 device. In addition, the Bluetooth ® enabled chip 43
16 allows an external device to upload data from the display
17 device 10.

18

19 Also shown in Figure 4 is removable memory storage unit.
20 This is for example a removable memory card 27 as shown
21 in Figure 2. Arrows 46 represent the removal or
22 insertion of the removable memory card 27. When
23 inserted, the detachable memory unit 27 communicates with
24 the data processing unit 41 and the memory storage unit
25 42. The data processing unit 41 is able to access data
26 direct from the detachable memory storage unit 27. In an
27 alternative configuration, data may be transferred from
28 the detachable memory storage unit 27 to the memory
29 storage unit 42 for subsequent access by the data
30 processing unit 41. In this latter case, the detachable
31 memory storage unit 27 need not be left inserted in the
32 device.

33

1 Figure 4 also shows keypad 32 connected to the data
2 processing unit 41. The keypad 32 allows interaction of
3 the consumer device, as will be described in more detail
4 below.

5
6 The keypad 32 allows interaction between the display
7 device and an operator or a consumer. For example, the
8 display 25 may prompt a consumer to press a particular
9 button on the keypad in order to obtain more information
10 on the product advertised. The keys can operate a menu
11 driven system to allow the consumer to access, for
12 example, nutritional information, possible recipes for
13 the product, and or further information about the product
14 or related special offers. The keypad could also enable
15 a consumer to enter personal information to be included
16 on a mailing list or entered into a competition.

17
18 In addition, the keypad can enable the operator, who may
19 be an employee of the store or an external contractor to
20 configure the device.

21
22 Although the Figures show a keypad consisting of two
23 keys, it will be appreciated that alternative
24 configurations of the keypad may be used. In addition,
25 the LCD module may be a touch screen, allowing a consumer
26 or operator to directly select icons displayed on the
27 screen.

28
29 Figure 5 shows a plurality of display devices in use.
30 The display devices are mounted on the shelf in a retail
31 outlet by securely fixing the base 14 to the shelf. The
32 internal components and the housing are then fitted onto
33 the base to complete the product replica model form of

16

1 the display. Typically, several display devices will be
2 located at different positions in a store.

3

4 An operator, who may be an employee of the store or an
5 external contractor, updates the content of the memory in
6 the display devices. The operator carries a wireless
7 portable device including a bank of audio, video and text
8 data for the promotion of various products and brands.

9 The portable device is Bluetooth ® enabled to allow
10 wireless transfer of data from portable device to the
11 display device. When the operator brings the portable
12 device within transmission/reception range of the display
13 device, he is able to update the memory content of the
14 display device with new promotional material. In
15 addition, the operator is able to download data from the
16 display device to the portable unit.

17

18 Although the description above gives Bluetooth ® enabled
19 devices as the preferred embodiment, it will be apparent
20 to the skilled reader that other wireless transmission
21 methods are equally applicable.

22

23 In addition, data could be transferred from or to the
24 portable device to the display device by simply
25 transferring a removable memory card 27 from one device
26 to another. A yet further possibility is the transfer of
27 data from the portable device by a USB and appropriate
28 connectors.

29

30 The reader will appreciate that alternative shapes of
31 display device are possible. By way of example, Figures
32 6 and 7 show an alternative embodiment of the invention.
33 The embodiment shown in Figures 6 and 7 are similar to

1 that shown in Figures 1 and 2, with like components
2 represented by the same reference numerals. However, in
3 the example of Figures 6 and 7, the display device is
4 shaped as a food can.

5
6 Further alternative shapes are envisaged. For example,
7 the device may be shaped as a drinks can, a wine bottle,
8 a detergent bottle, a soap powder box, or any other type
9 of get-up or packaging for a product.

10
11 Figure 5 shows a number of display devices positioned in
12 a retail outlet. The retail outlet is in this example a
13 supermarket stocking a variety of products on shelf units
14 32. The different products include beverage bottles 34,
15 and soap powders or detergents 52. The figure shows a
16 bottle-shaped display device 10 disposed amongst bottles
17 34. On a second shelf, additional display devices 51 are
18 positioned amongst the soap powder boxes and detergent
19 bottles, with each display being shaped as an adjacent
20 product.

21
22 In use, an operator 53 carries a portable device 54
23 capable of wirelessly transmitting and receiving data
24 from or to the display devices 10, 51. The portable
25 device comprises a bank of data, and the Operator is able
26 to select the appropriate material for transmitting to a
27 display device. To enable the data to be controllably
28 transmitted to the display devices, the transmission
29 equipment may be directional, to avoid transmitting to
30 several display devices at once. Alternatively, the
31 transmission range of the portable device 54 can be less
32 than the separation between two display devices, so that

1 the data can only be transmitted to the display device
2 within range.

3

4 In the same manner, the operator can walk around the
5 store and upload data from the display devices. This can
6 enable data to be stored centrally for late analysis.

7

8 A further alternative embodiment of the invention is
9 shown in Figure 8. In this embodiment, the display
10 device is incorporated as part of a beverage dispenser in
11 a bar, public house or restaurant. The beverage
12 dispenser 81, commonly referred to as a beer font,
13 comprises a moulded housing 84 and a dispensing tap 83.
14 The moulded housing 84 is adapted to define an internal
15 cavity containing the internal components of the device.
16 The internal components are analogous to those shown in
17 the embodiment of Figures 1, 2, 6 and 7. A window 85 is
18 provided in the housing to allow an LCD 86 to display to
19 the user promotional material. The display device
20 incorporated into a beer font 81 is shown position on a
21 bar 87 adjacent to a conventional beer font 82.

22

23 In use, the LCD will display promotional material,
24 typically video clips, for advertising a beverage. A
25 consumer standing at the bar will be faced with a choice
26 of competing brands. The eye-catching nature of the
27 display located at the point of sale draws the attention
28 of the wavering consumer to a particular brand. The
29 brand is therefore reinforced at the point of sale.

30

31 The audio-visual content of the display device may be
32 updated by means of any of the techniques referred to
33 above. In particular, the beer fonts may be Bluetooth @

1 enabled to allow wireless transmission or reception of
2 data to or from a portable device. Alternatively, the
3 beer fonts may be networked with a central server or PC.
4

5 The present invention in its various aspects offers a
6 number of advantages and benefits. It offers an eye-
7 catching display to consumers in a compact form. The
8 shaping of the device allows it to be placed in amongst
9 the products offered for sale or offered for disposal,
10 without adversely effecting shelf displays. The device,
11 if it has the same footprint as the products will fit
12 easily into the product arrangement.
13

14 The device can be placed in amongst the products
15 discretely, so that it has the potential to surprise a
16 consumer when it catches their attention. In addition,
17 the device will not have a detrimental effect on the
18 display even when it is not being used.
19

20 The device allows reinforcement of the product or brand
21 at the point of sale itself, ie directly at the area at
22 which the consumer is faced with the product selection.
23

24 The device enables more information to be provided at the
25 point of sale. For example, the consumer is able to
26 access product data, such as recipe information, prize
27 draw details or other product information. In addition,
28 the provision of an interface would allow the device to
29 retrieve information and upload it to a central device.
30

31 Furthermore, the device can be readily configured or
32 updated by transferring audio, visual, or text data to or
33 from the device.

20

1
2 Various changes, alterations, modifications and
3 improvements may be made to the above-described
4 embodiments within the scope of the invention herein
5 intended.

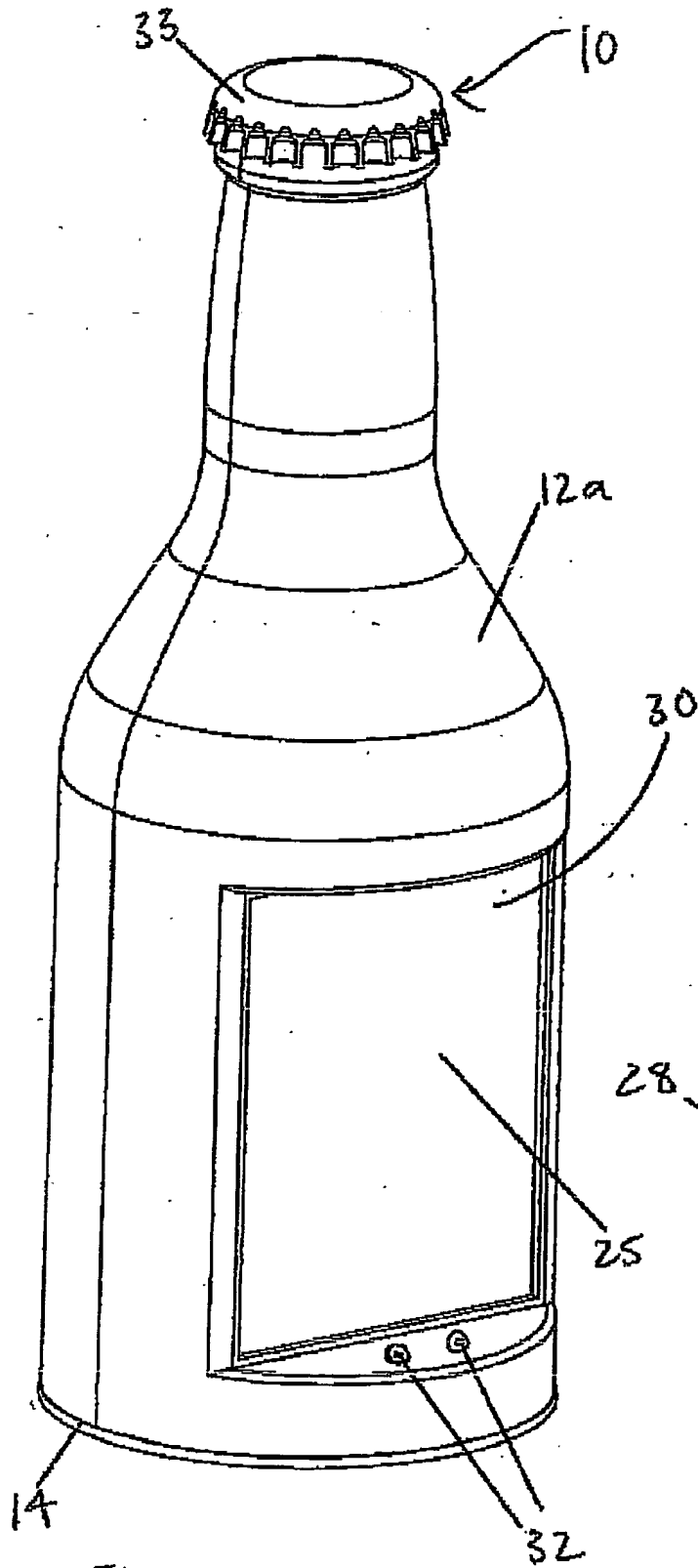


FIGURE 1a

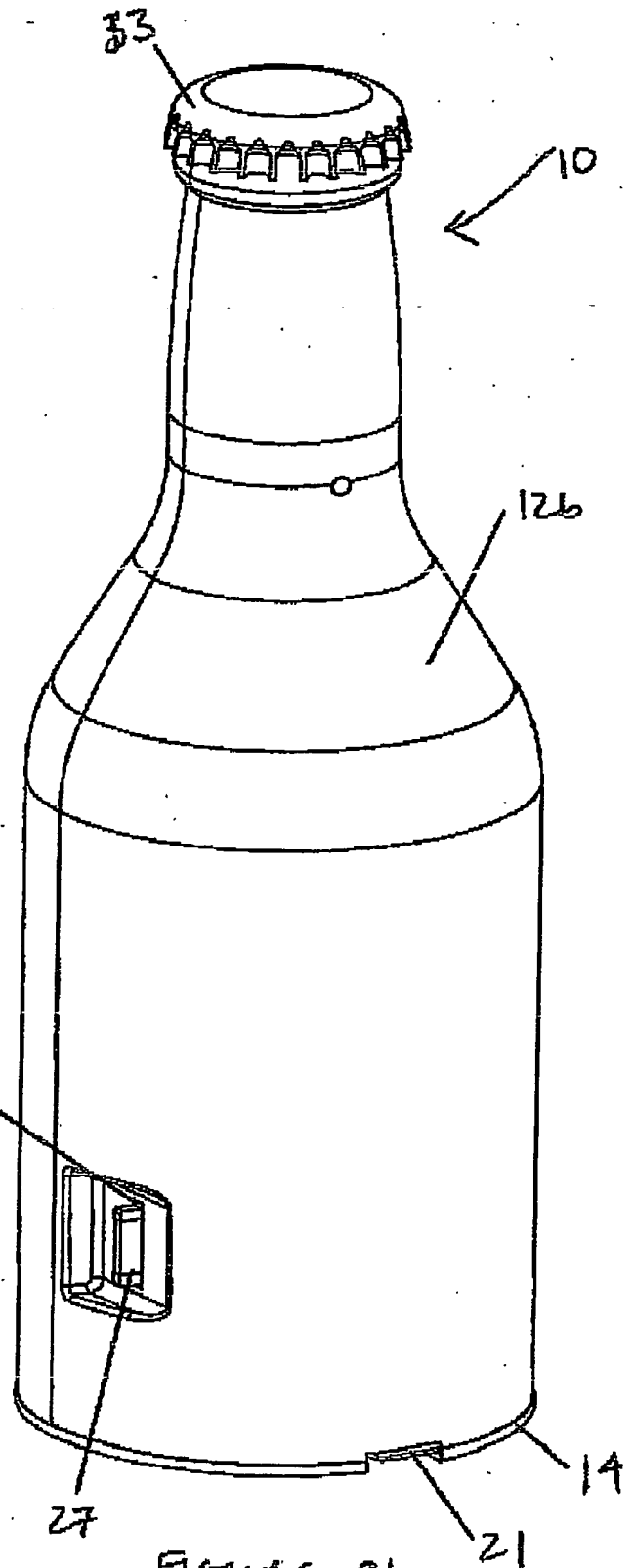


FIGURE 1b

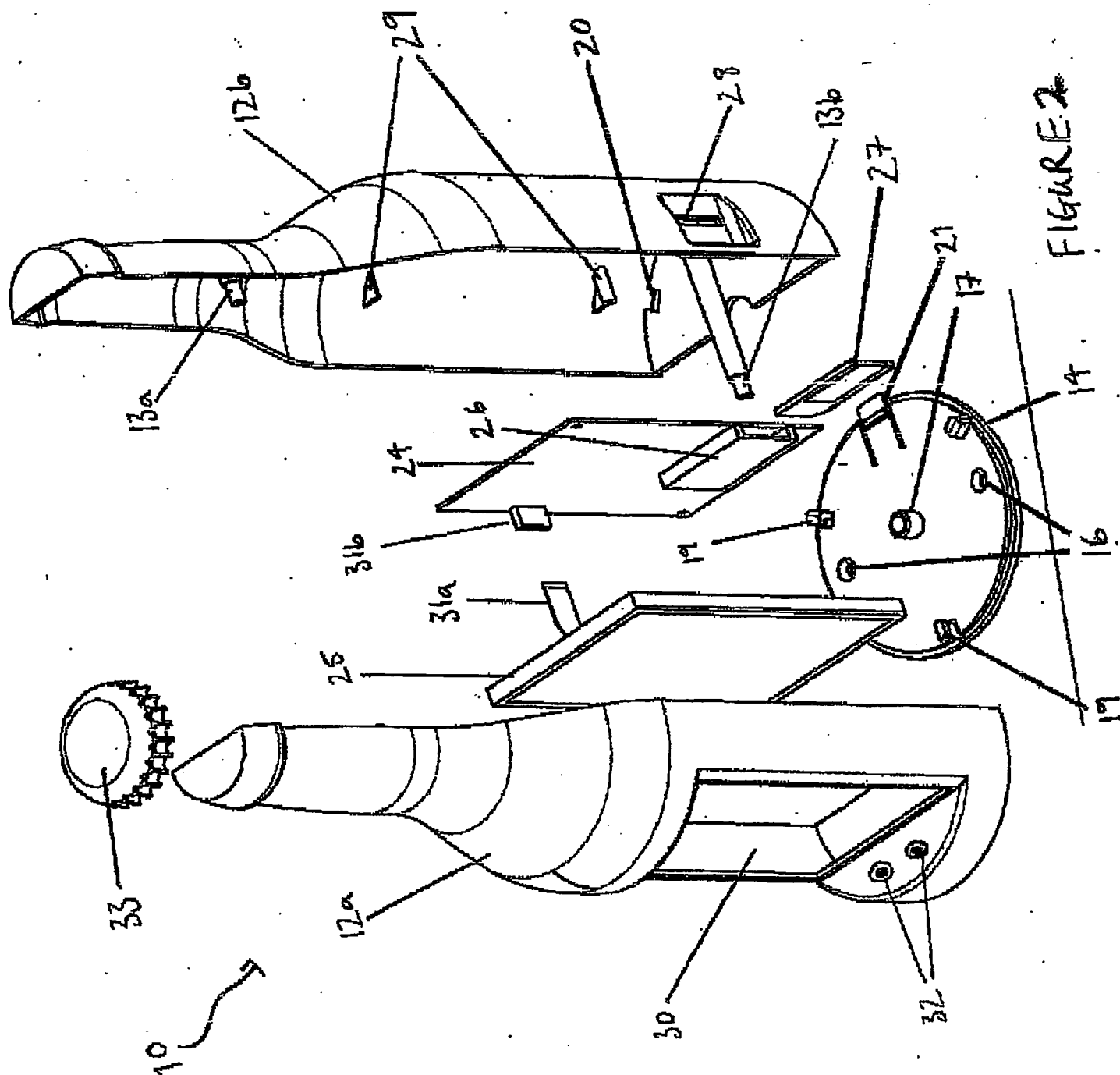


FIGURE 2

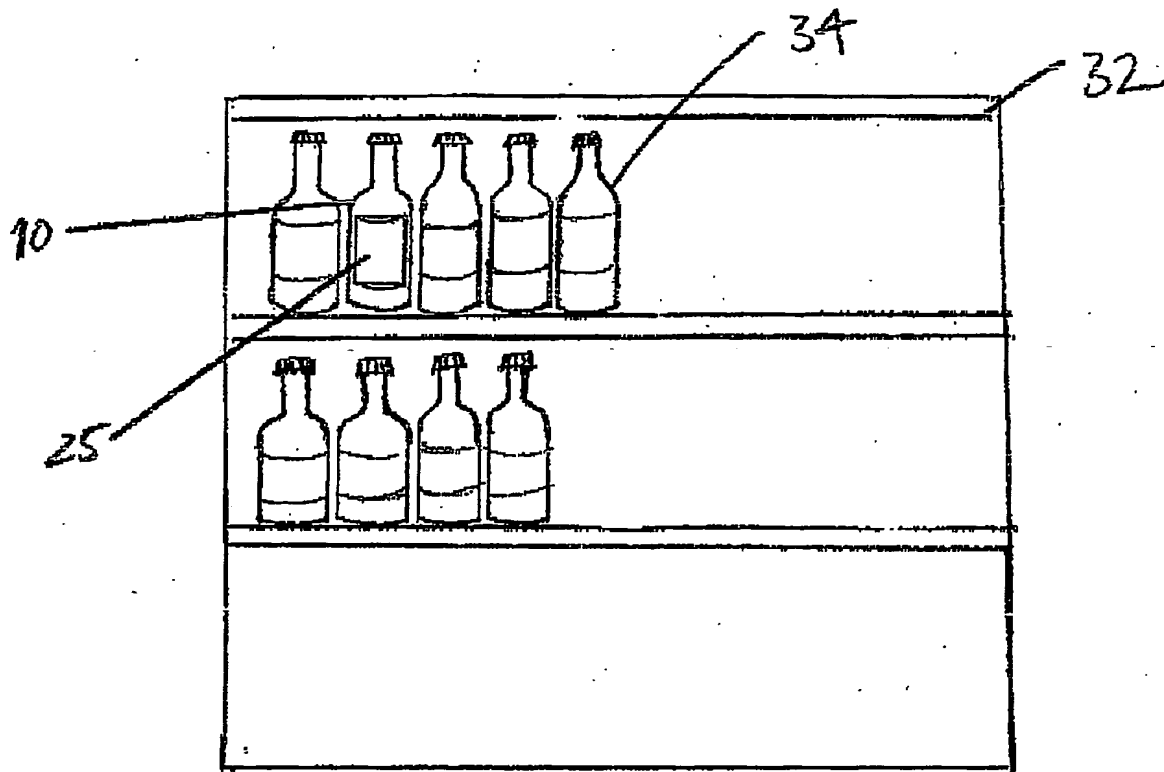
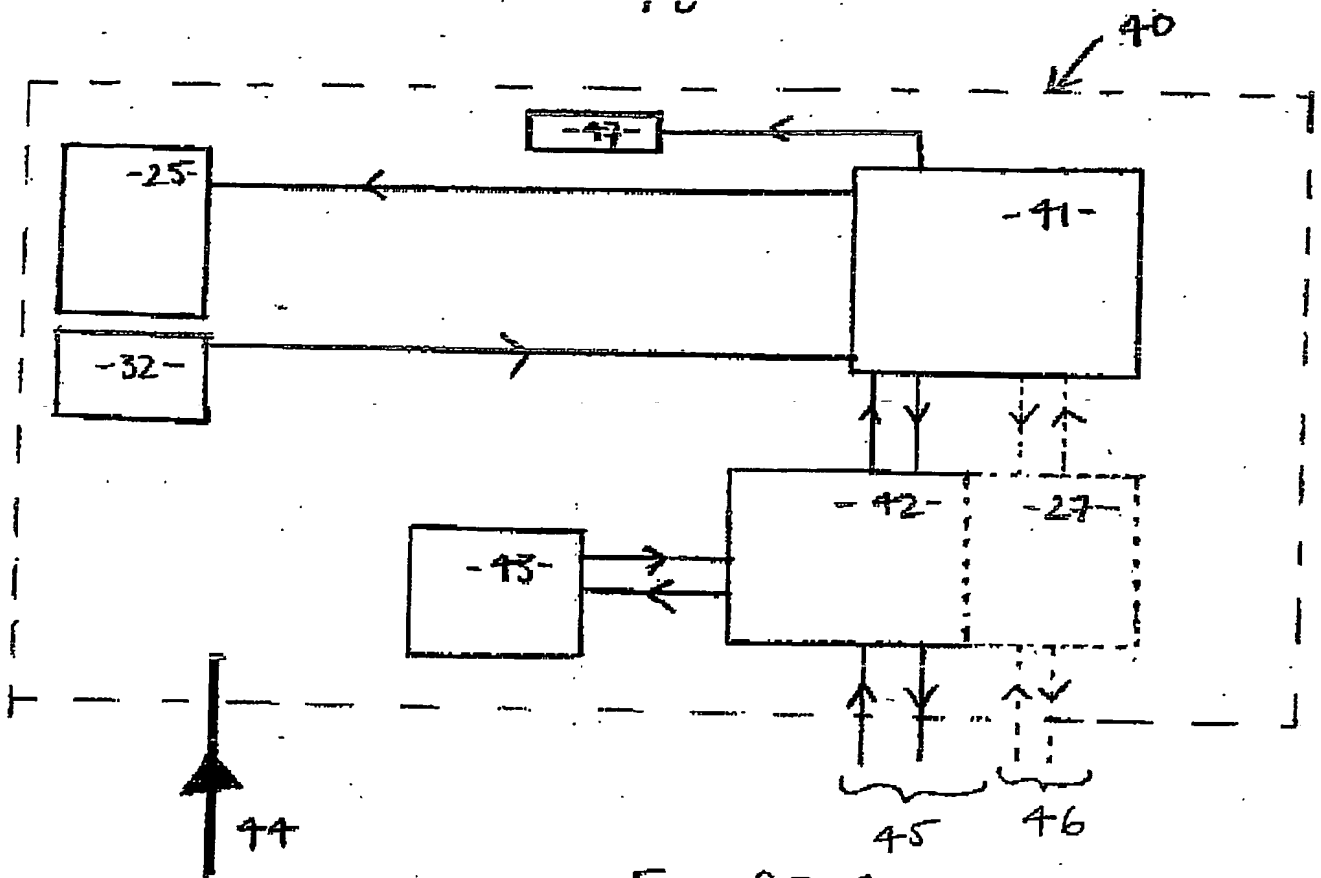


FIGURE 3



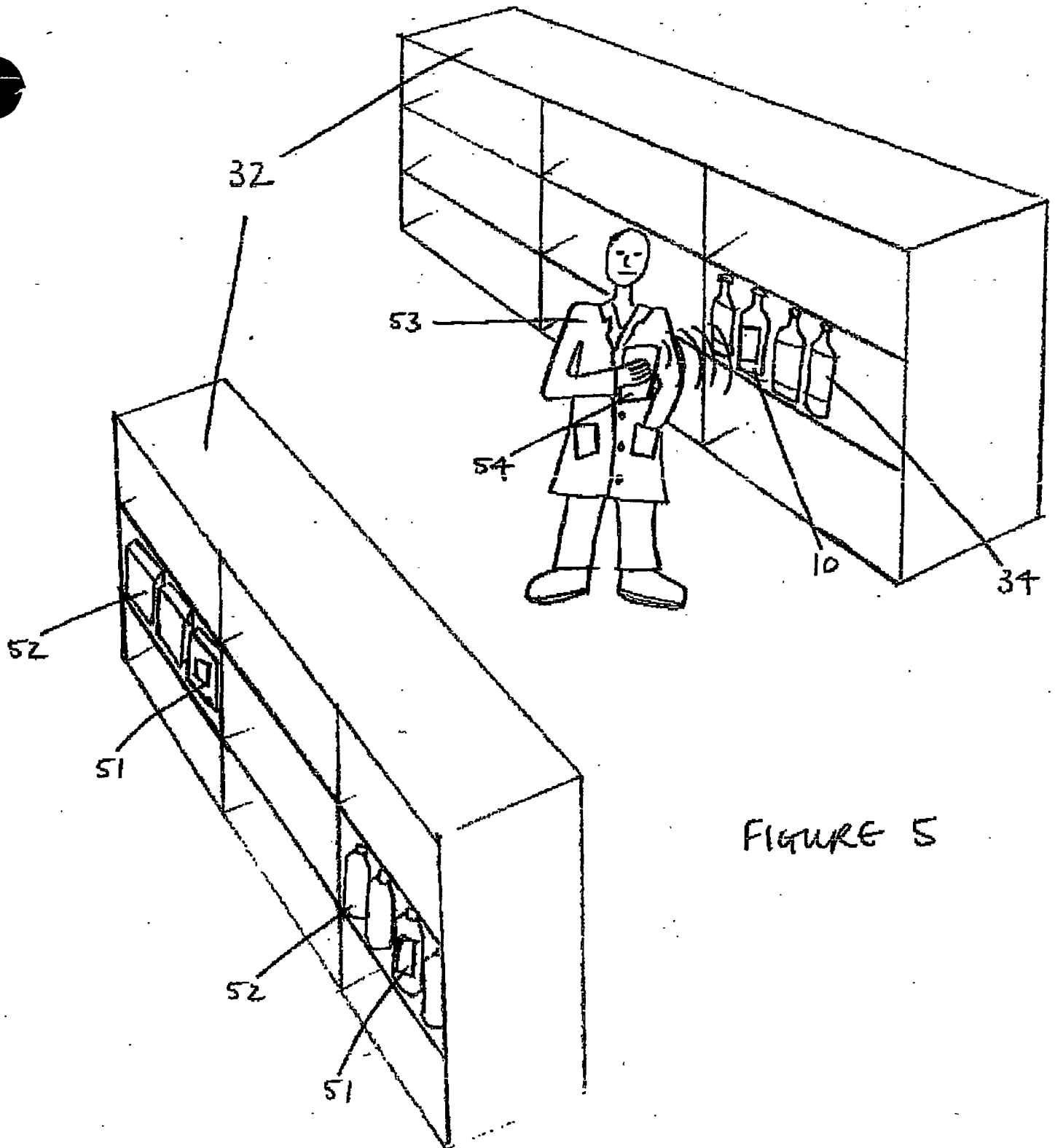


FIGURE 5

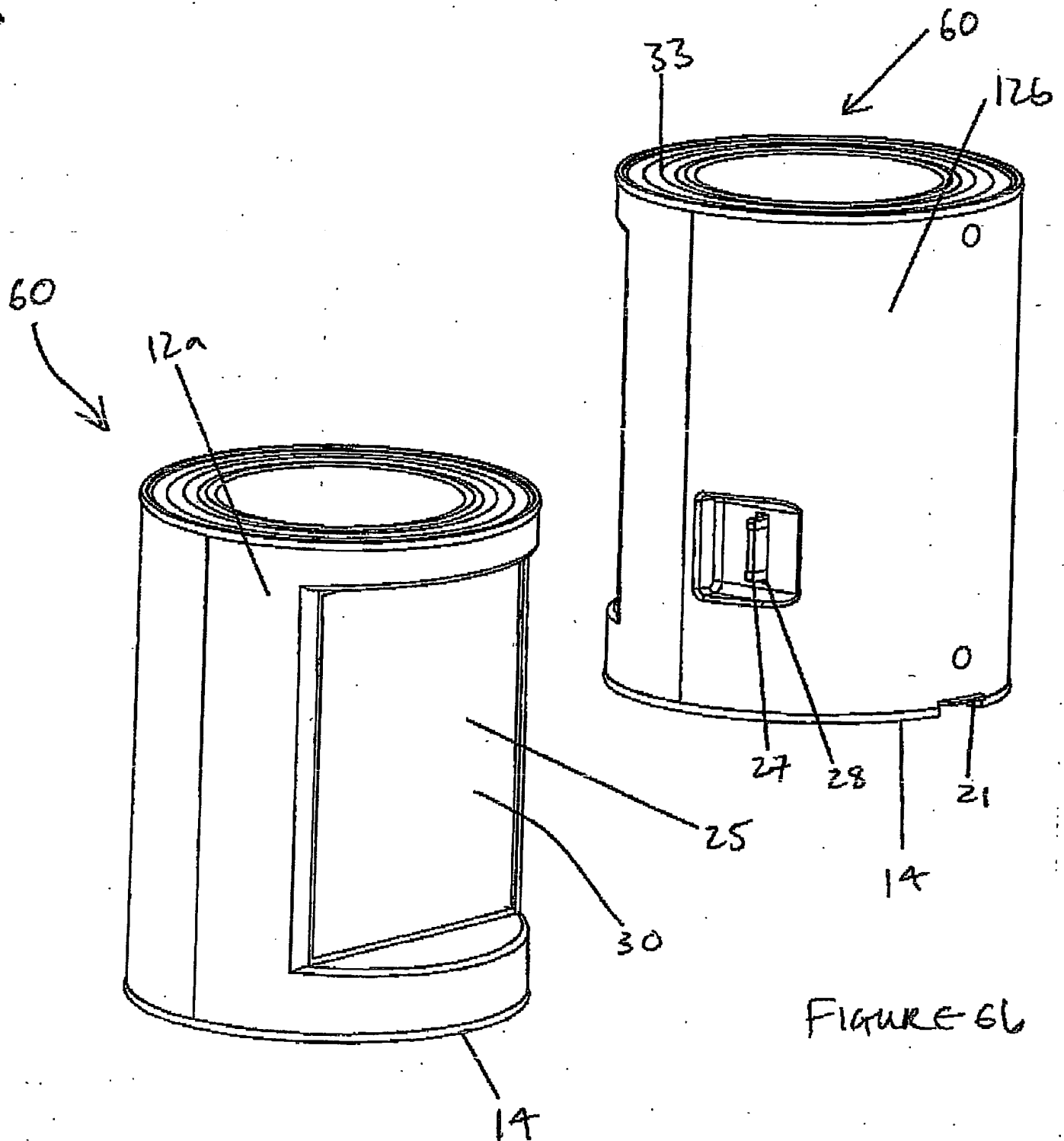


FIGURE 6a

FIGURE 6b

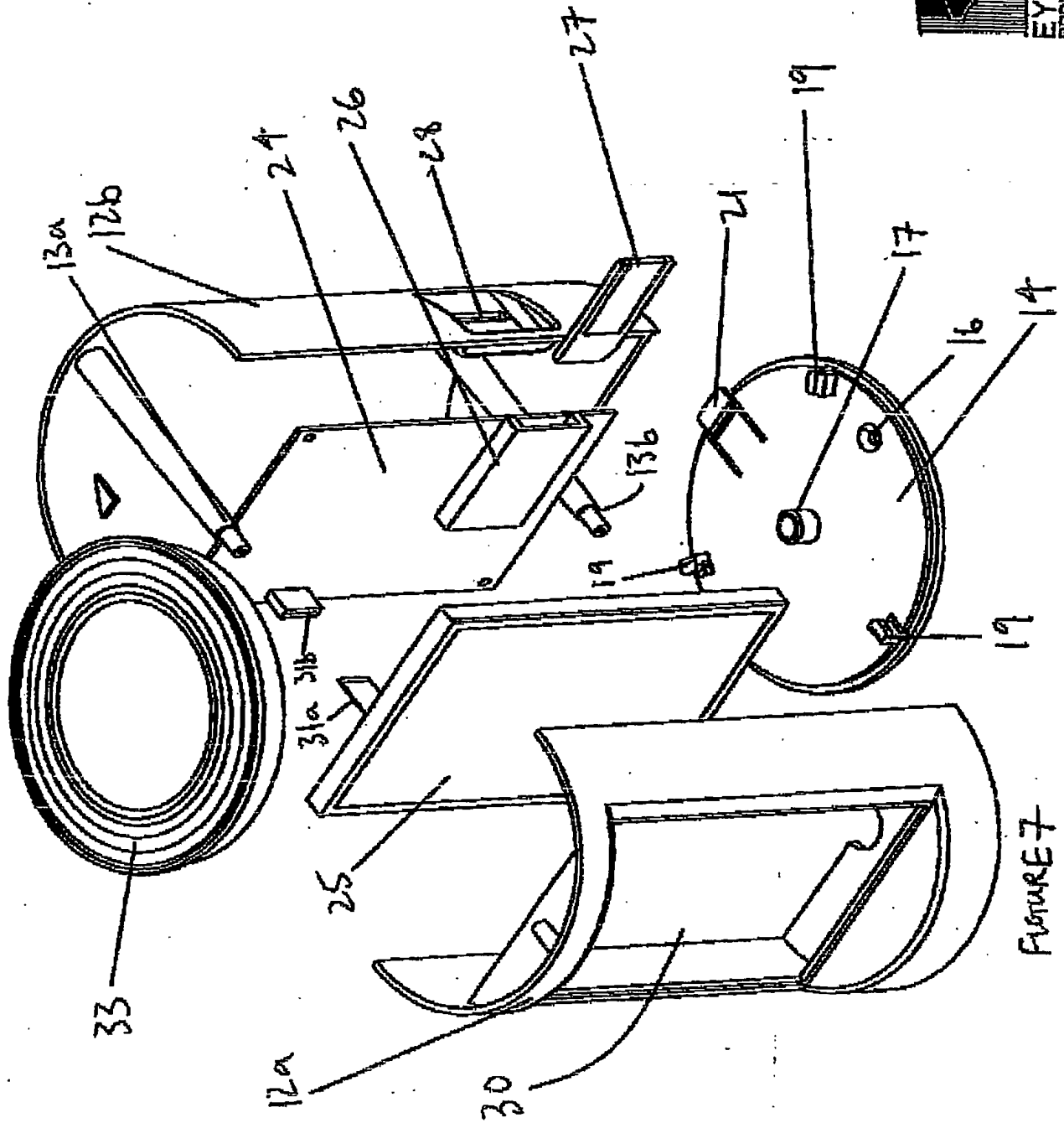
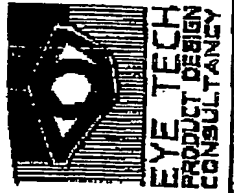


FIGURE 7

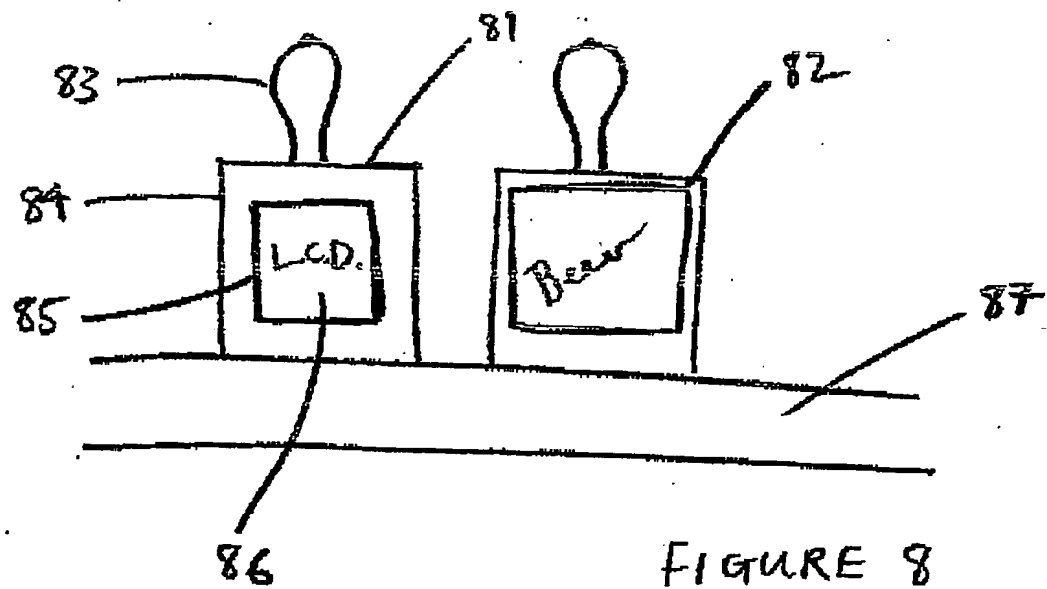


FIGURE 8

PCT/GB2004/001237



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